Distribution and abundance of spiny lobster in the KWNWR and GWHNWR: Impacts of an intense recreational fishery

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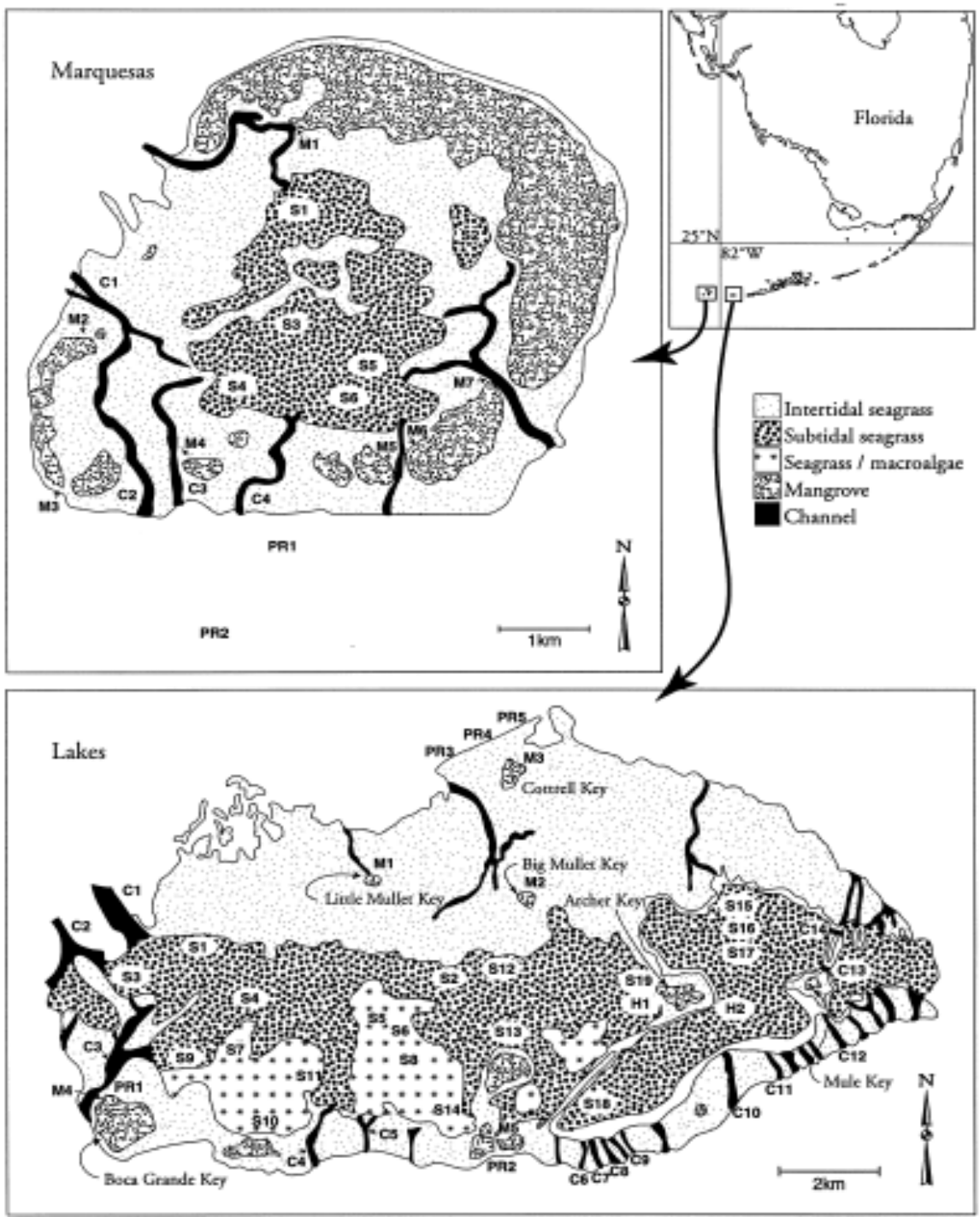
Objectives

- What is the magnitude of the impact of 2 d mini-season?
- What is the relationship between lobster density and fishing effort?

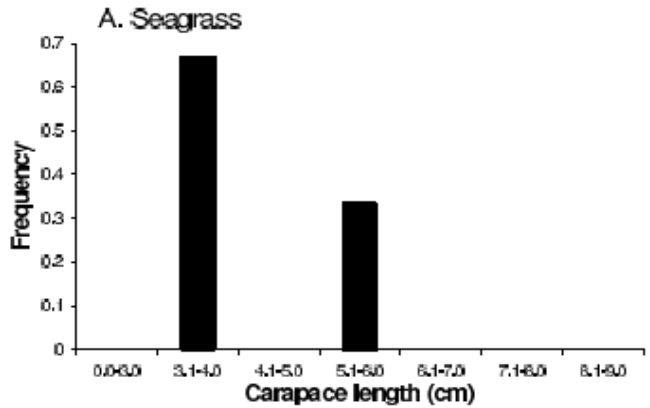
KWNWR (2000)

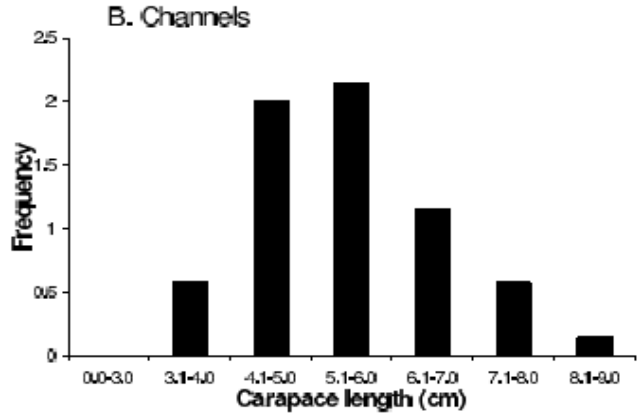
Three locations
- Lakes
- Marquesas
- Closed and Fished areas

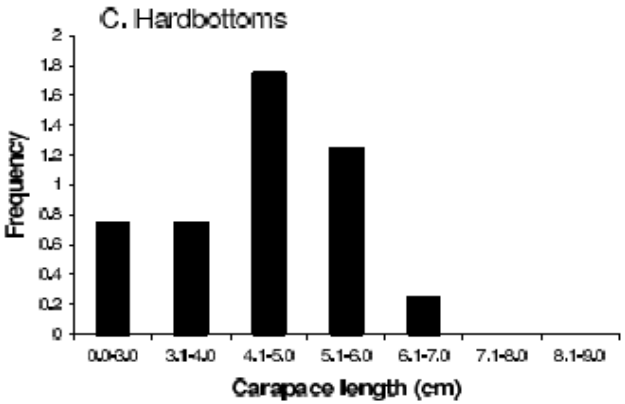
Diver Surveys
- Band transects
- Timed surveys

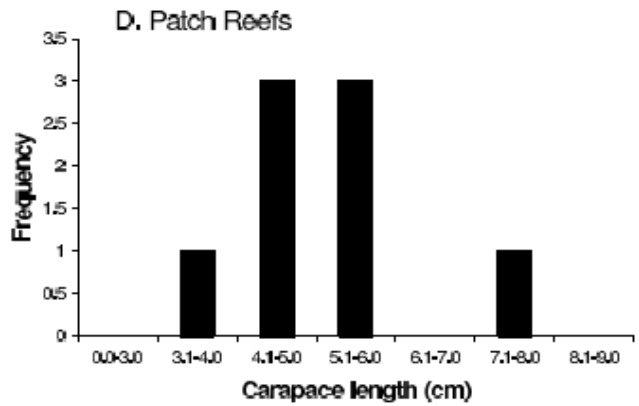


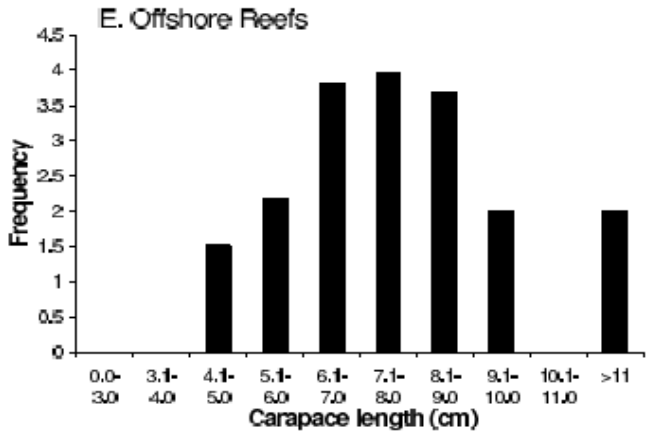
Distribution and abundance by habitat



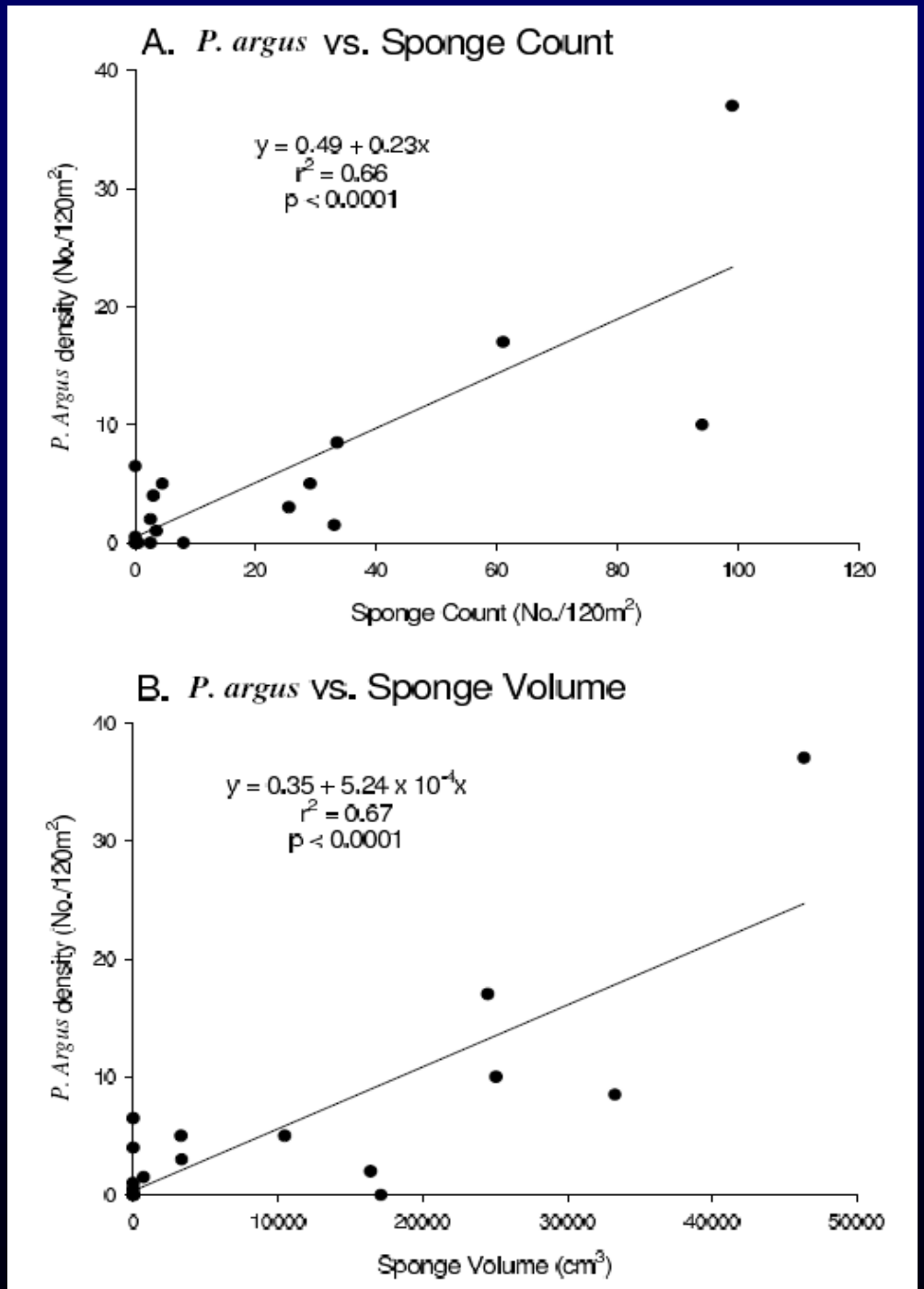




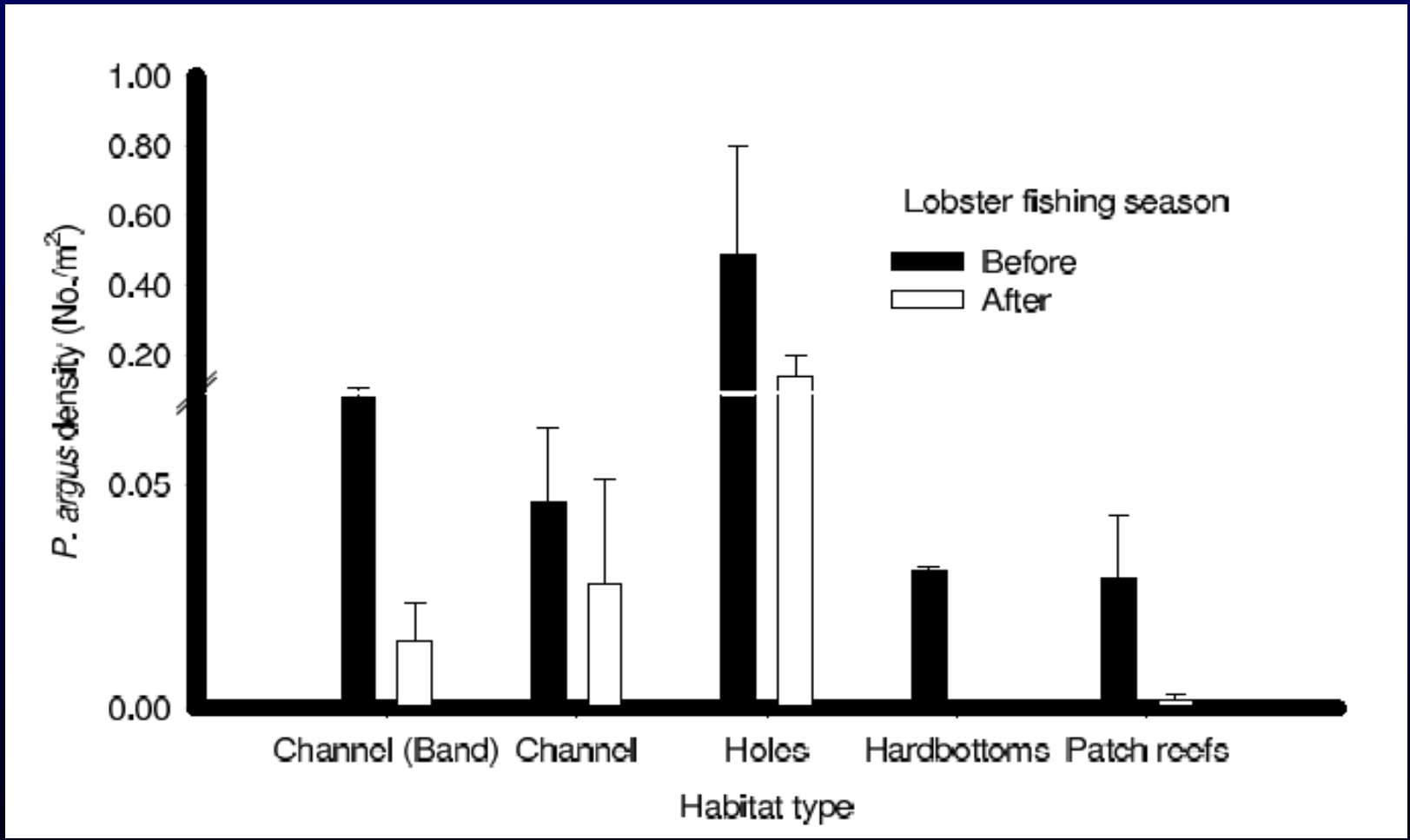




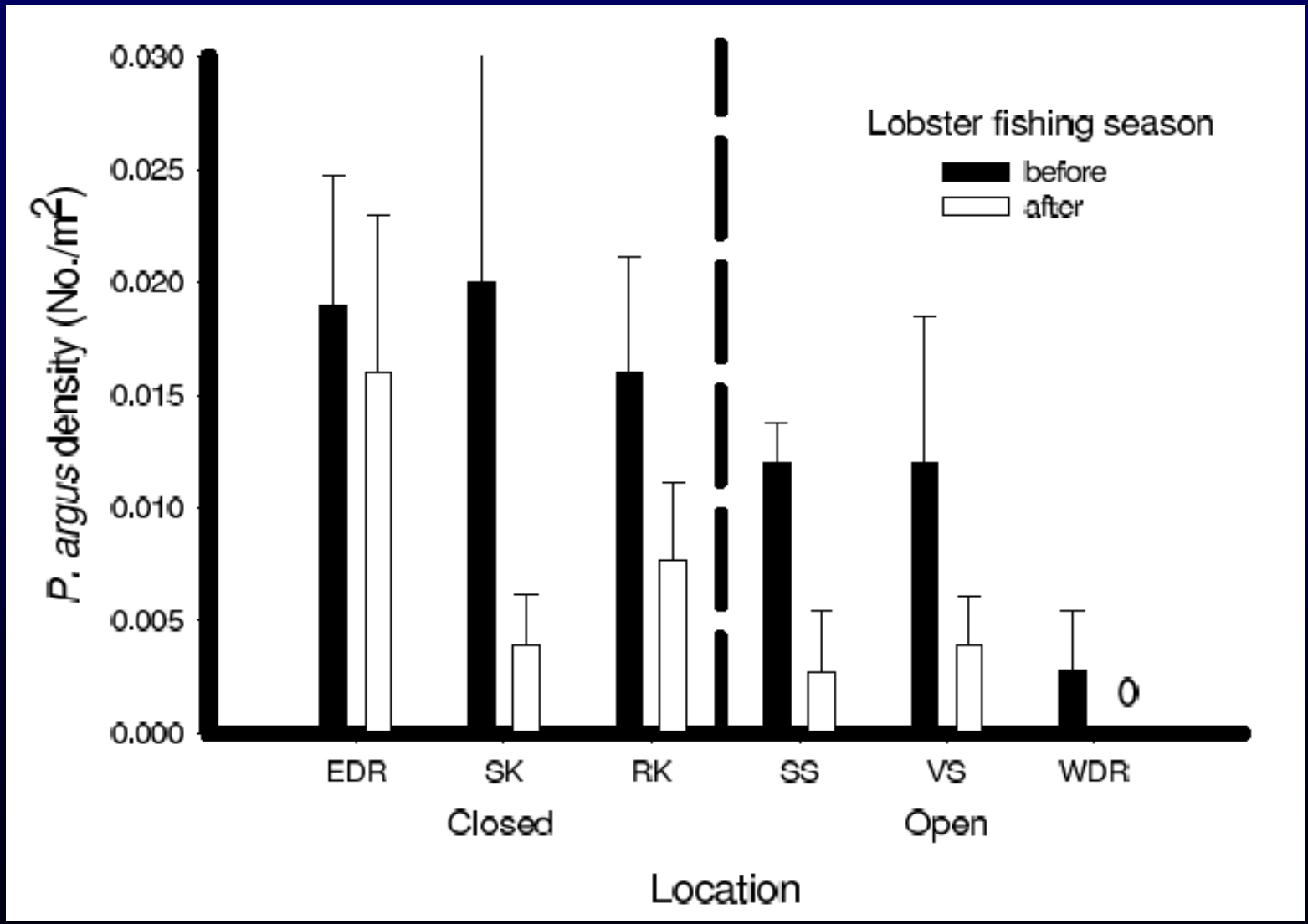
Lobster density and sponges



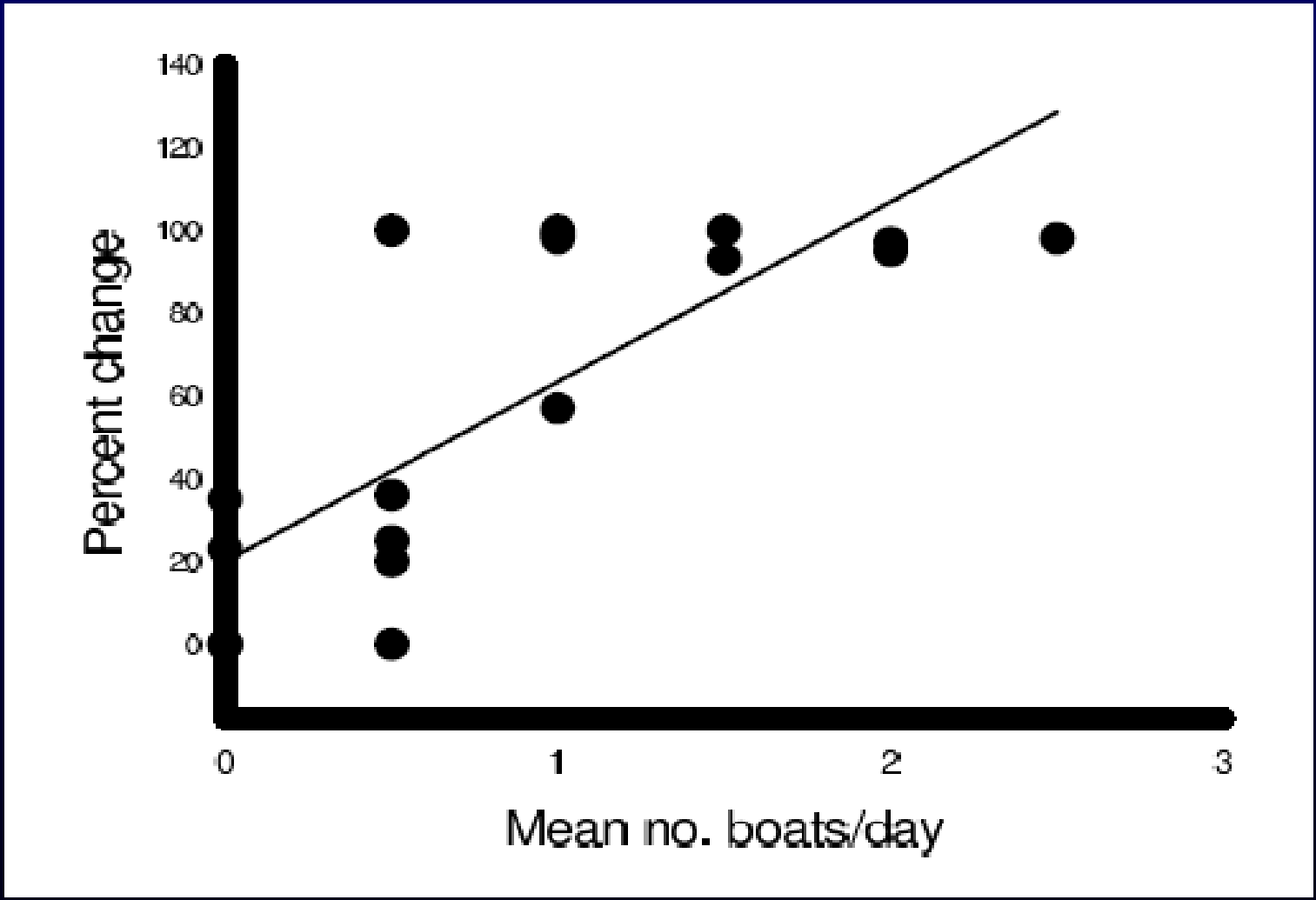
Impact of mini-season - KWNWR



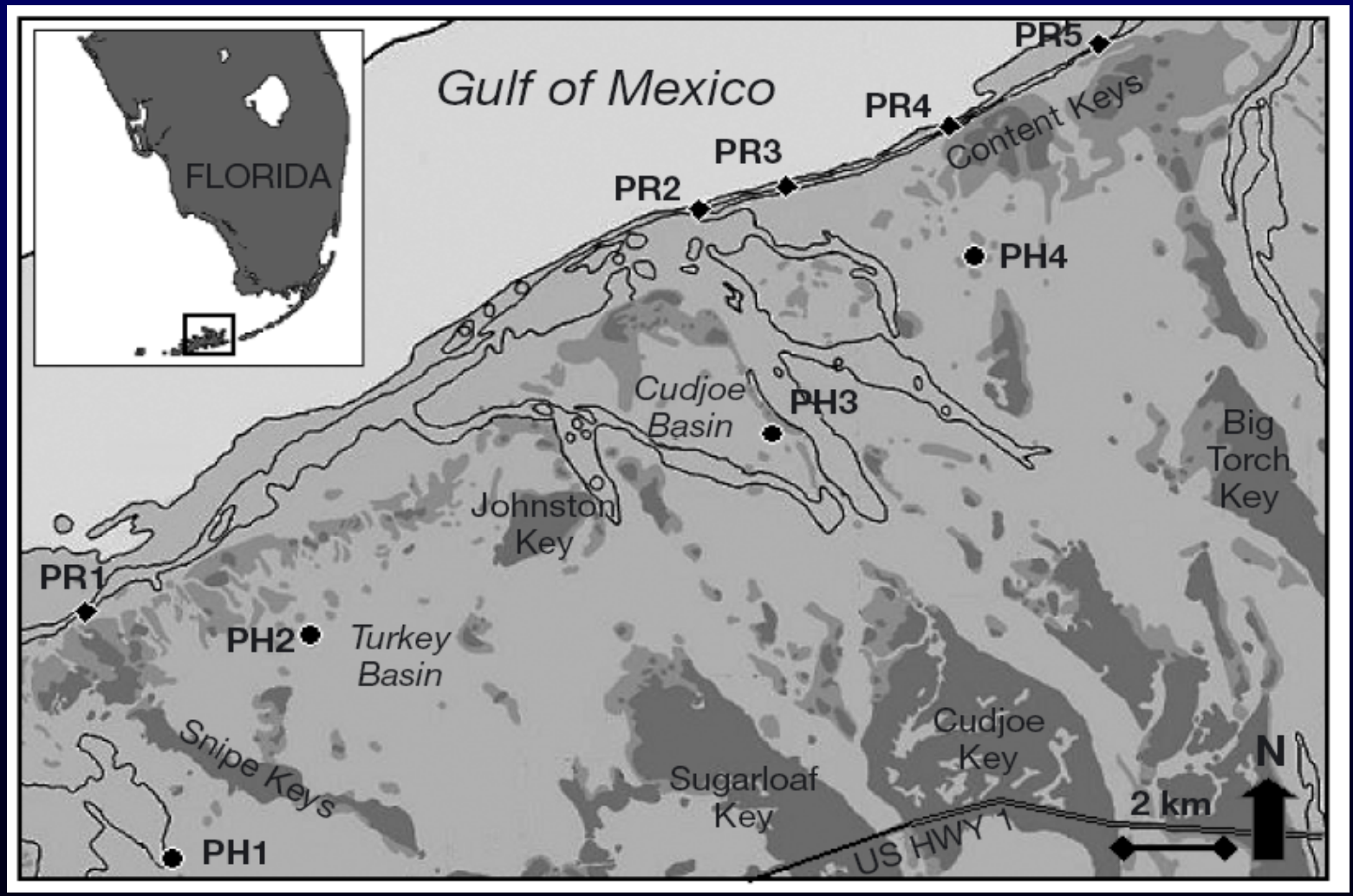
Impact of mini-season (Closed vs. Open)



Effect of fishing effort



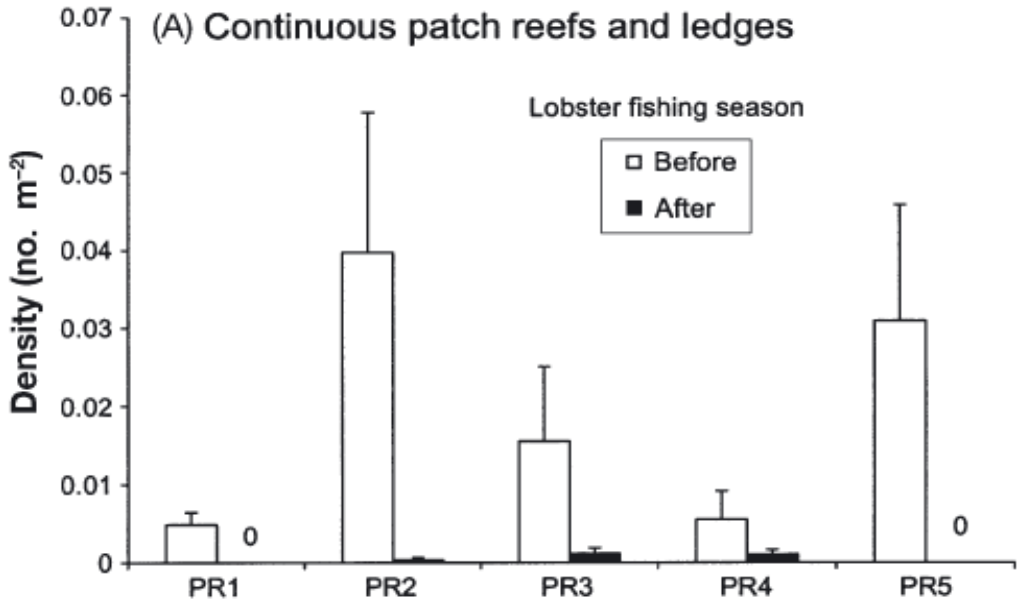
GWHNWR (2002)

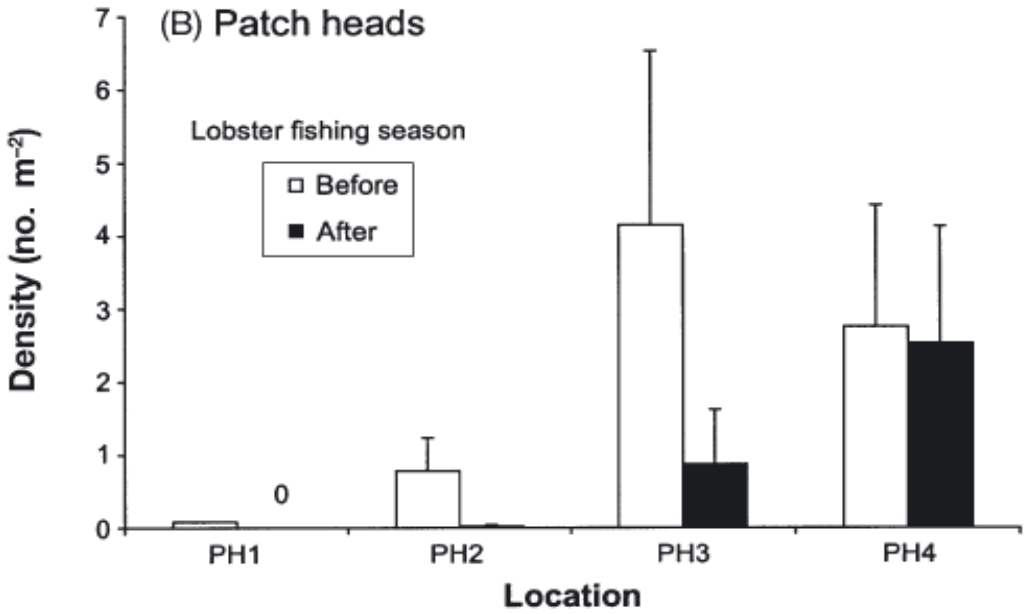

FLORIDA
Gulf of Mexico
PR5
PR4
Content Keys
PR3
PR2
PH4
Cudjoe Basin
PH3
Big Torch Key
Johnston Key
PR1
PH2
Turkey Basin
Snipe Keys
Cudjoe Key
Sugarloaf Key
PH1
US HWY 1
2 km
N

Lobster density (> 76.2 mm) before and after mini-season

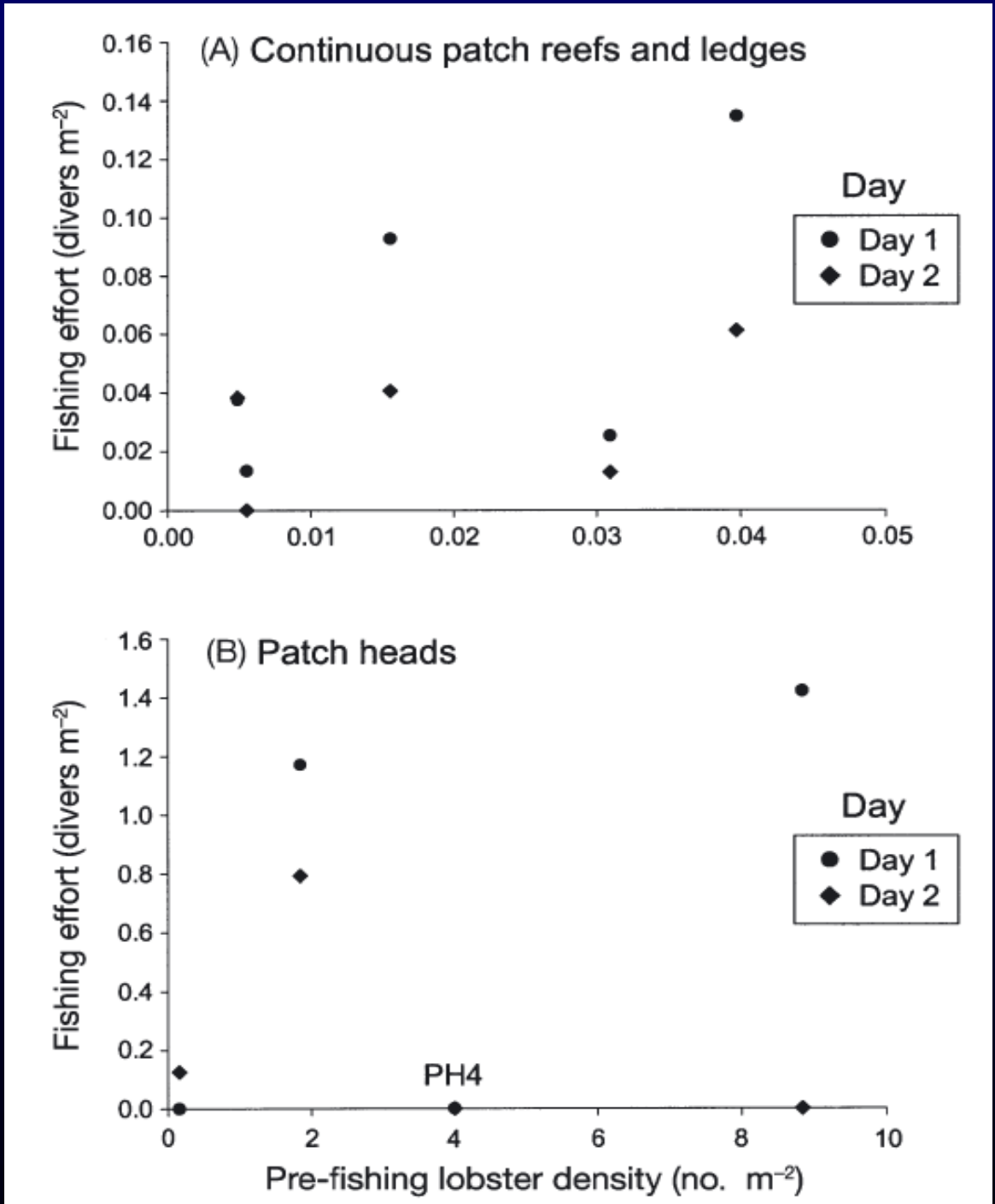
- Patch Reefs ~ 95% decline
- Patch Heads ~ 79% decline

- 55% at Looe Key (Blonder et al. 1988)
- 58% in the Tortugas (Davis et al. 1977)





Mini-season Effort



Conclusions 1999

- In 1999, ~ 80% removal across all locations including 3 closed areas
- Lobster density was highest in Channels, Hardbottom, and Patch Reefs
- Lobster density was positively correlated to sponge area and volume

Conclusions 2002

- In 2002, ~ 90% removal across all locations
- Fishing effort was 10 times greater on patch heads than patch reefs
- Fishing effort during mini-season was ~900 times greater than regular season
- Patterns in 2004 were similar, surveys will continue in 2005